Operation of construction machinery at the Dorchester site, including pile drivers, will increase background noise levels. During final construction, steam venting and blows to test equipment and clear piping will occur periodically for short intervals during daytime construction hours. However, construction noise impacts from the site are expected to be less than 90 dBA at the property lines. Construction will also occur in two areas of the Nanticoke River shoreline. Construction equipment used in these areas will include pile drivers, jack hammers, bulldozers, graders and other large construction equipment. Noise from construction equipment will increase background noise levels over a wider area because of the proximity of sources to the river. However, noise impacts from construction of the barge unloading area at the property lines will be approximately 85 dBA, declining to between 65 and 80 dBA near the residential areas of Vienna. Noise impacts from construction of the pipeline intake and discharge structures will be below 80 dBA at the property lines, and less than 70 dBA at the nearest residences (Delmarva Power, Phase II CPCN application, 1993, pg 4.7.3-2).

Noise impacts from construction of linear facilities will briefly impact residences near the proposed corridors, but will be below COMAR standards at residences along the routes (Delmarva Power, Phase II CPCN application, 1993, pg 4.7.3-2). Some households north of the site will be temporarily disrupted by equipment and work crews as construction progressed across properties and driveways.

Once operational, aesthetic impacts will be primarily visual, although steam venting could occur in emergency situations at the plant (Delmarva Power, Phase II CPCN application, 1993, pg 5.5.4-1). Prominent structures on the Dorchester site will include a 495-foot-high stack, a 96-foot-high turbine building, 37-foot-high cooling tower and 85-foot-high structures in the switchyard. The plume from the cooling tower will be up to 1,900 feet high, depending upon atmospheric conditions and plant load, and will average nearly 600 feet (Delmarva Power, Phase II CPCN application, 1993, pg 5.10.0-1). The combustion by-products disposal cells will be 75 feet high when completed. The barge unloading facility near Delmarva Power's Vienna Unit 8 power plant will be 67 feet high. Transmission line towers will be single-pole structures approximately 80 feet high spaced at intervals of 450 feet over the 2.5-mile-long corridor between the site and the tie-in to the existing transmission line south of Kelly Road (Delmarva Power, Phase II CPCN application, 1993, pg 6.1.3-1).

Sensitive receptors within 1 mile of the Dorchester site include 45 residences, a church and a cemetery (Delmarva Power, Phase II CPCN application, 1993, pg 2.2.6-1). Distance and intervening vegetation will mitigate visual and noise impacts upon receptors within this radius. However, construction noise and other nuisances will periodically affect

some residences along Maiden Forest Road to the north of the site, and along Maiden Branch Road to the east. Delmarva Power will retain existing on-site forests as buffers, to the greatest extent possible, to minimize impacts upon these receptors (Delmarva Power, Phase II CPCN application, 1993, pg 4.8.0-1). Construction of the proposed plant will not physically disturb the cemetery.

Other sensitive receptors in the area include natural resource areas and parks (See Table 3-7). None of these receptors are within 2 miles of the proposed site. As a result, they will be only minimally affected by construction activity.

Most of the Town of Vienna is within 1 mile of the coal barge unloading facility. As a result, noise from construction activities will periodically but temporarily impact residences and other sensitive receptors located there (Delmarva Power, Phase II CPCN application, 1993, Figure 4.7.3-3). These receptors include the Vienna Waterfront Park, located approximately 1,000 feet south of the facility, the Vienna athletic field, the Vienna Elementary School, a bed-and-breakfast inn, three churches and two cemeteries (Delmarva Power, Phase II CPCN application, 1993, pg 2.2.6-1). However, most construction activities will be visually obscured from view by vegetation and commercial and industrial structures that currently separate the town from the site.

Since construction traffic for the barge unloading facility will access the site north of the town, trucks and heavy equipment entering and leaving the site would be occasionally visible and audible. However, these nuisance impacts would be temporary and will be mitigated to some extent by distance and intervening buffers.

Construction of the barge unloading area will be visible from some perspectives on the opposite shore of the Nanticoke River, from the US 50 bridge spanning the river, and from commercial and recreational traffic on the Nanticoke River. Although visual impacts will not be mitigated by intervening buffers from these perspectives, they would be largely unnoticed because the construction site is next to the existing Vienna power plant. Noise from construction activity will probably extend across the Nanticoke River to the opposite shoreline (Delmarva Power, Phase II CPCN application, 1993, Figure 4.7.3-3) and will be audible to recreational boaters using the river in the vicinity of the construction site. However, impacts will decline with distance from noise sources and will only temporarily affect the environment around the barge unloading facility.

Aesthetic impacts from construction of linear facilities associated with the power plant will be transitory by nature of the facilities and will only briefly affect sensitive receptors along the rights-of-way. Construction of

the rail spur and transmission line will occur over a 9-month period. The joint corridor will cross several private properties north of the site. There are 14 residences within 0.25 mile of the centerline of the joint rail and transmission line corridor (Delmarva Power, 1994, response to DNR Data Request No. 1, Question 49). One house to the east of SR 331 south of Jones Thickett Road is located less than 50 feet from the centerline and would be demolished or moved during construction of the corridor. Delmarva Power has an option to purchase this residence (Delmarva Power, 1994, response to DNR Data Request No. 1, Question 50). Several houses, a church and a cemetery at the intersection of SR 331 and Kraft Road lie within 0.25 mile of tie-in of the rail spur to the Delmarva Power branch line to Hurlock.

During construction of the rail spur and transmission line, construction equipment will visually intrude into the existing rural landscape and increase dust emissions. Noise from transmission line excavation and rail installation will exceed 70 dBA within 500 feet of the centerline (Delmarva Power, Phase II CPCN application, 1993, pg 4.7.3-2). However, construction impacts will be temporary, and sensitive receptors will be variably affected due to differences in vegetation that would afford some relief along the right-of-way.

The pipeline corridor will follow SR 331 and Maiden Branch Road from the Vienna power plant to the proposed site. There are 10 residences along SR 331 between US 50 and Maiden Branch Road, and three residences on Maiden Branch Road (Delmarva Power, Phase II CPCN application, 1993, pg 2.2.6-1). The pipeline will be aligned more than 1,000 feet south of the cemetery near the intersection of Maiden Branch Road and Maiden Forest Road. It will cross two intermittent tributaries to Chicone Creek, but will pass to the east of the Chicone Creek Natural Heritage Area and the associated Chicone Creek wetlands (Delmarva Power, Phase II CPCN application, 1993, pg 6.2.6-3). Within the Vienna power plant property, the Nature Conservancy wildlife area is within 0.25 mile of the pipeline corridor, but will not be physically disturbed by construction activities.

Noise and fugitive dust will be the primary aesthetic impacts from construction of the pipeline corridor. Construction machinery will also be visible from locations adjacent to the right-of-way. Although pipeline construction will occur over a 7-month period, the duration of construction near any given location will be relatively brief. Because the pipeline corridor will follow SR 331 and Maiden Branch Road from the Vienna power plant to the Dorchester site, the alignment offers little in the way of mitigation. However, impacts will be in addition to existing traffic and infrastructure along these routes.

The aesthetic value of the region will also be impacted by construction-related traffic. Most local construction worker traffic would originate from US 50 at its intersection with SR 331, although up to 20 percent of construction workers would travel to the site from the north on SR 331 (Delmarva Power, Phase II CPCN application, 1993, Figure 4.10.1-1). Delmarva Power estimated that between 240 and 350 vehicles will be added to area roads during the morning and afternoon from construction workers commuting to and from the Dorchester site (Delmarva Power, Phase II CPCN application, 1993, pg 4.10.1-2). An additional 10 to 20 trucks will access the site on public roads during a typical day. Public roads could occasionally be used to transport oversize or overweight deliveries of equipment to the site, although Delmarva Power anticipated transporting most of this equipment by rail (Delmarva Power, Phase II CPCN application, 1993, pg 4.10.1-3). Construction-related traffic impacts will occur over a 38-month period, but will be most intense in the peak construction period, about 20 months after construction begins.

With the exception of US 50, roads surrounding the Dorchester site are lightly traveled. Average daily traffic on SR 331 in 1992 was 1,300 vehicles per day, while 100 or fewer vehicles traversed Maiden Branch Road and Maiden Forest Road on an average day (Delmarva Power, Phase II CPCN application, 1993, Table 2.2.9-2). Construction-related traffic will increase traffic by up to 25 percent on SR 331, and by more than 300 percent on Maiden Branch Road and Maiden Forest Road. The aesthetic impacts from increased traffic will be confined to residents next to affected roadways and existing users. Given the temporary and episodic nature of traffic generated by construction of the plant, aesthetic impacts will be minimal.

Aesthetic impacts from plant operation will be primarily visual in nature. Because of the visibility of the stack, boiler building, cooling tower, safety lights and associated plumes, impacts would occur over a broader area. Located within the coastal plain, the area offers little visual relief from most surrounding perspectives, although vegetation in the area offers natural buffers that would block the visibility of most of the plant from many directions.

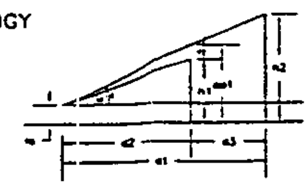
Numerous residences, churches, cemeteries, public places and natural areas are within 5 miles of the power plant site. The results of Delmarva Power's visibility analysis indicate that vegetation will obscure the power plant stack and boiler building from most of these sensitive receptors (Figures 4-9 and 4-10), except during the winter when foliage is minimal, and when atmospheric conditions increase the size and height of the plumes. The power plant stack will also be visible from parts of the Nanticoke River shoreline in Wicomico County and from the river itself.

Figure 4-9 Estimated Extent of Visibility of The Proposed Dorchester Power Plant S

Source: Delmarva Power, 1994, response to DNR Data Request No. 3, Question 5

ck

METHODOLOGY



LEGEND

ls = LINE OF SIGHT

α = CALCULATED ANGLE BETWEEN LINE OF SIGHT AND EXISTING SCREEN

β = CALCULATED ANGLE BETWEEN LINE OF SIGHT AND DORCHESTER COMPONENT

h1 = HEIGHT OF EXISTING SCREEN (TREES)

h2 = HEIGHT OF DORCHESTER POWER PLANT COMPONENT (STACK, 495' AND BOILER BUILDING, 195')

d1 = DISTANCE FROM POWER PLANT COMPONENT TO THRESHOLD OF POWER PLANT COMPONENT VISIBILITY

d2 = DISTANCE FROM THRESHOLD OF POWER PLANT COMPONENT VISIBILITY TO EXISTING SCREEN

d3 = DISTANCE FROM EXISTING SCREEN TO POWER PLANT COMPONENT

ap2 = APPARENT HEIGHT OF PROPOSED DORCHESTER COMPONENT AT EXISTING SCREEN

V = CALCULATED VISIBILITY OF PROPOSED DORCHESTER COMPONENT ABOVE EXISTING SCREEN

THE POWER PLANT COMPONENT WILL BE VISIBLE WHEN ap1 IS GREATER THAN h1. THE THRESHOLD OF POWER PLANT COMPONENT VISIBILITY IS WHEN ap1=h1. AT THAT POINT THE FOLLOWING APPLY:

$\tan \alpha = \frac{h1}{d2}$ AND $\tan \beta = \frac{h2}{d1}$

$d2 = d1 - d3$ THEREFORE: $\tan \alpha = \frac{h1}{d1 - d3}$

WHERE $ap1 = h1$, $\tan \alpha = \tan \beta$

THEREFORE: $\frac{h1}{d1 - d3} = \frac{h2}{d1}$; $h1d1 = h2d1 - h2d3$

ASSUMING A HEIGHT OF 65' FOR ALL SCREENS (h1), AND APPLYING THE HEIGHT OF 495' FOR THE STACK POWER PLANT COMPONENT, IT FOLLOWS THAT:

$65d1 = 495d1 - 495d3$; $-430d1 = -495d3$; $d1 = 1.15d3$

DETERMINE d3 FOR THE VARIOUS POINTS OF CONCERN AND SOLVE FOR d1 TO DETERMINE THE THRESHOLD OF VISIBILITY FOR THE STACK POWER PLANT COMPONENT.

LEGEND

U.S. 50 ● — LOCATION OF PHOTOGRAPHIC SIMULATION POINTS OF VIEW

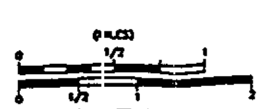
AREAS WHERE STACK CANNOT BE SEEN

AREAS WHERE STACK CAN BE SEEN

AREAS OF DENSE VEGETATION/ VISUAL SCREENS

RIVER

1, 2, 3 AND 4 MILE RADII FROM PROPOSED STACK LOCATION



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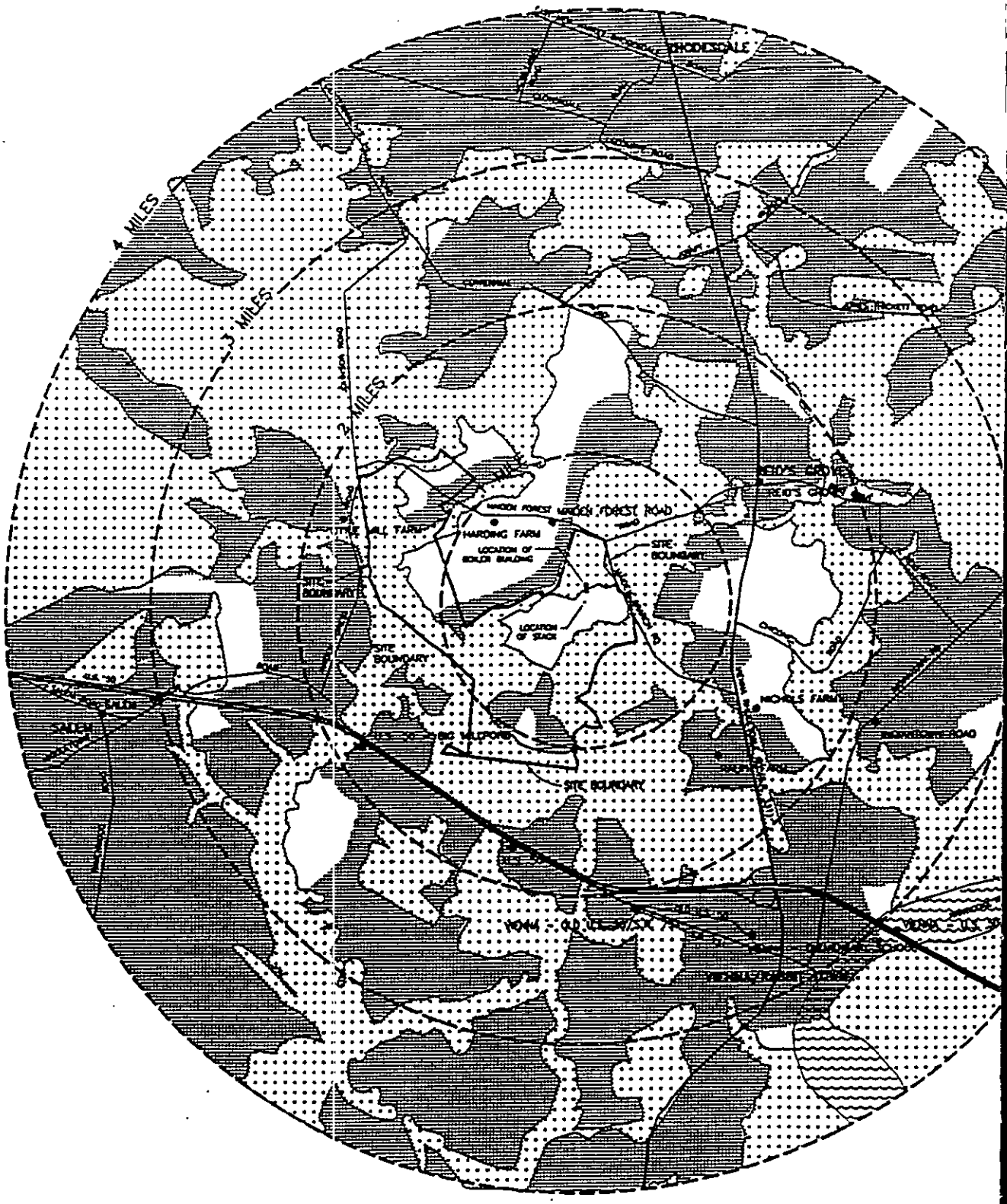
SOURCES: [illegible]

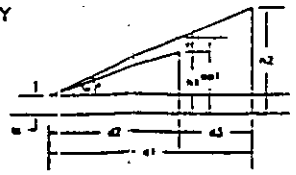
Figure 4-10 Estimated Extent of Visibility of The Proposed Dorchester Power Pl



Source: Delmarva Power, 1994, response to DNR Data Request No. 3, Question 5

t Boiler Building

METHODOLOGY



LEGEND

- lo = LINE OF SIGHT
- α = CALCULATED ANGLE BETWEEN LINE OF SIGHT AND EXISTING SCREEN
- δ = CALCULATED ANGLE BETWEEN LINE OF SIGHT AND DORCHESTER COMPONENT
- h1 = HEIGHT OF EXISTING SCREEN (TREES)
- h2 = HEIGHT OF DORCHESTER POWER PLANT COMPONENT (STACK, 495' AND BOILER BUILDING, 195')
- d1 = DISTANCE FROM POWER PLANT COMPONENT TO THRESHOLD OF POWER PLANT COMPONENT VISIBILITY
- d2 = DISTANCE FROM THRESHOLD OF POWER PLANT COMPONENT VISIBILITY TO EXISTING SCREEN
- d3 = DISTANCE FROM EXISTING SCREEN TO POWER PLANT COMPONENT
- ap2 = APPARENT HEIGHT OF PROPOSED DORCHESTER COMPONENT AT EXISTING SCREEN
- V = CALCULATED VISIBILITY OF PROPOSED DORCHESTER COMPONENT ABOVE EXISTING SCREEN

THE POWER PLANT COMPONENT WILL BE VISIBLE WHEN ap1 IS GREATER THAN h1. THE THRESHOLD OF POWER PLANT COMPONENT VISIBILITY IS WHEN ap1=h1. AT THAT POINT THE FOLLOWING APPLY:

$\tan \alpha = \frac{h1}{d2}$ AND $\tan \delta = \frac{h2}{d1}$

$d2 = d1 - d3$ THEREFORE: $\tan \alpha = \frac{h1}{d1-d3}$

WHERE $ap1 = h1$, $\tan \alpha = \tan \delta$

THEREFORE: $\frac{h1}{d1-d3} = \frac{h2}{d1}$; $h1d1 = h2d1 - h2d3$

ASSUMING A HEIGHT OF 65' FOR ALL SCREENS (h1), AND APPLYING THE HEIGHT OF 195' FOR THE BOILER BUILDING POWER PLANT COMPONENT, IT FOLLOWS THAT:

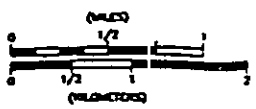
$65d1 = 195d1 - 195d3$; $-130d1 = -195d3$; $d1 = 1.50d3$

DETERMINE d3 FOR THE VARIOUS POINTS OF CONCERN AND SOLVE FOR d1 TO DETERMINE THE THRESHOLD OF VISIBILITY FOR THE BOILER BUILDING POWER PLANT COMPONENT.

LEGEND

U.S. 50 ●

- LOCATION OF PHOTOGRAPHIC SIMULATION POINTS OF VIEW
- AREAS WHERE BOILER BUILDING CANNOT BE SEEN
- AREAS WHERE BOILER BUILDING CAN BE SEEN
- AREAS OF DENSE VEGETATION/ VISUAL SCREENS
- RIVER
- 1, 2, 3 AND 4 MILE RADII FROM PROPOSED BOILER BUILDING LOCATION



SOURCE: [illegible]

In addition, power plant structures would be visible from vehicles traveling northbound on US 50.

Visual impacts from the facility structures will detract from aesthetic values near these sensitive receptors by adding industrial structures to otherwise rural viewsheds. From some perspectives, such as from the southern shore of the Nanticoke River, these viewsheds are already compromised by existing industrial and commercial buildings near Vienna. From residences close to the facility, the aesthetic impact will be significant. However, vegetation will reduce opportunities to view the plant.

Background noise and occasional steam ventings emanating from the proposed Dorchester facility will occasionally impact the aesthetics of the area, although these impacts will be limited in duration and scope.

Visual impacts from the proposed barge unloading and intake/discharge facility will be spatially restricted because of the limited scale of structural components. Aesthetic values will also be impacted by noise from conveyers and other coal handling equipment associated with the barge unloading facility and from intake pumps, although potential daytime and nighttime L_{eq} noise impacts from facility operation will add only slightly to existing background noise levels and will be well within applicable COMAR and USEPA standards (Delmarva Power, Phase II CPCN application, 1993, pg 5.5.4-2).

Most sensitive receptors to operational impacts from the barge unloading facility and intake pump lie to the south in the Town of Vienna. However, views towards Delmarva Power's waterfront facilities from the town will be buffered by vegetation and existing commercial and industrial structures. In the context of existing views in that direction, no visual impacts upon sensitive receptors are anticipated from the barge unloading area. Noise from the barge delivery of coal will decline rapidly from the property line and will occur only during daytime hours, leaving sensitive receptors in the town largely unaffected (Delmarva Power, Phase II CPCN application, 1993, pg 5.5.4-2).

Barge traffic on the Nanticoke River will increase by nearly one vessel per day (5.7 barges per week) if coal is transported exclusively by barge. Although the increased traffic could conceivably impact usage and enjoyment of the Nanticoke River by recreational boaters, increases will be largely imperceptible since barges will be moored to the dock most of the time.

The most significant aesthetic impact from the operation of the barge unloading facility relates to truck traffic transporting coal to the Dorchester site. If used exclusively as the source of coal supply, the barge unloading facility will add up to 175 round-trip truck trips per day to SR 331 and Maiden Branch Road (Delmarva Power, Phase II CPCN application, 1993, pg 6.4.1-1). Essentially, up to 350 trucks will pass each point along the truck route each day, producing impacts such as noise and dust from heavy vehicles, and visual intrusion upon 10 residences along SR 331 between US 50 and Maiden Branch Road, and three residences on Maiden Branch Road.

Increased traffic on SR 331 will be noticeable to residents along the right-of-way, and to regular travelers of this segment of highway. Although the current average daily traffic on SR 331 is only 1,300 vehicles, the addition of 350 slow-moving coal trucks to this segment of the highway will be perceived as significant to existing users of the highway.

Delmarva Power estimated that potential noise levels of coal trucks 50 feet from the haul road will be below the COMAR daytime standard of 65 dBA (Delmarva Power, Phase II CPCN application, 1993, pg 5.5.4-4). The only buffers between the highway and residents on SR 331 and Maiden Branch Road are property setbacks and limited vegetative screening, although paved road surfaces will minimize impacts from dust. The CPCN requires Delmarva Power to further reduce dust emissions from coal trucks by covering trailers for the trip from the barge unloading area to the Dorchester site.

Rail impacts upon sensitive receptors will be periodic, relating to the frequency of delivery of coal to the site. On-going operation of trains in the on-site rail loop will also generate minor nuisance impacts, although these will be largely internalized to the power plant site. If rail is used exclusively as the source of coal, a 100-car unit train would deliver coal to the facility approximately once every 3 to 4 days. Trains would take less than 3 minutes to pass any given point along the rail corridor although the time would increase as trains approached the on-site rail loop (Delmarva Power, Phase II CPCN application, 1993, pg 5.7.3-1). Impacts from rail operations will extend along the rail spur from the plant site to its tie-in with the Delmarva Power branch line near the intersection of SR 331 and Kelly Road, where a new corridor will be constructed, and along the unused branch line to Hurlock.

The low profile of the train will result in little visual intrusion except to receptors directly next to the right-of-way. Noise from locomotives and rail cars encountered 100 feet from the track, however, will be significant and noticeable (Delmarva Power, Phase II CPCN application, 1993, pg 5.5.4-6). As described earlier, there are 14 residences within 0.25 mile of

the centerline of the proposed rail corridor between the Dorchester site and the Delmarva Power branch line. In addition, a church, cemetery and several houses are within 0.25 mile of the spur at the intersection of SR 331 and Kraft Road. Approximately 222 residences or other structures will be affected by rail operations between the tie-in to the Delmarva Power branch line and Hurlock, including a church in Petersburg, plus seven churches, a high school and an elementary school in Hurlock (Delmarva Power, Phase II CPCN application, 1993, pg 6.3.5-1). Rail operations will periodically block five private driveways off SR 331 serving residences and a commercial warehouse between Jones Thickett Road and Hurlock.

Transmission line impacts will be primarily visual and confined to the corridor between the Dorchester site and its tie-in with the existing Vienna-Steele line south of Kelly Road. Although little terrain relief is available along the right-of-way, some residences will be partially buffered from transmission line structures by existing forested areas (Delmarva Power, Phase II CPCN application, 1993, pg 6.1.5-1). Residences plus a church and cemetery at the Kelly Road-Kraft Road-SR 331 intersection, will have partial views of transmission lines and poles, although vegetation screening and distance will mitigate some of these impacts.

All pipelines for the proposed Dorchester plant will be buried and will not affect land uses or aesthetics of the area. Pipeline operation will not impact any sensitive receptors located along the proposed right-of-way.

Excavation, grading and other construction activities will affect identified archaeological and historical resources within the proposed Dorchester site. A Phase I field survey conducted by Delmarva Power resulted in the identification of 18 archaeological sites, including six prehistoric sites, six historic sites and six sites with both prehistoric and historic components. The 12 sites having prehistoric components, consisting of two base camps and 10 procurement camps. The 12 historic sites included four plantations, two farmsteads and six tenant farms (Delmarva Power, Phase II CPCN application, 1993, pg 2.2.5-14).

Table 4-31 summarizes archaeological findings associated with these sites. As a result of the Phase I field survey, Delmarva Power considered 10 sites to be potentially significant and recommended them for Phase II evaluation. Prehistoric sites recommended for Phase II evaluation included two potential base camps (18DO202 and 207) and five procurement camps (18DO192, 194, 196, 198 and 203). Historic sites recommended for Phase II evaluation included four plantations (18DO194, 198, 201 and 208), two 19th century farmsteads (18DO192 and 196) and two tenant farms (18DO195 and 203) (Delmarva Power, Phase II CPCN application, 1993, pg 2.2.5-15).

Table 4-31 Findings Associated with Archaeological and Historical Sites Identified as Part of the Dorchester Unit 1 Power Plant Project

Site No.	Type	Date	Integrity	Final Recommendation
18D0192	Historic farmstead & prehistoric procurement camp	1860-1920	Good	Phase II
18D0193	Prehistoric procurement camp	Late archaic	Poor	minimal subsurface testing, possible Phase II
18D0194	Historic plantation & prehistoric procurement camp	Late archaic, early woodland, 1725-1775	Good	Phase II
18D0195	Historic tenant farm	1820-1880	Good	Phase II
18D0196	Historic farmstead & prehistoric procurement camp	Early & late woodland, 1860-1920	Good	Phase II
18D0197	Historic tenant farm & prehistoric procurement camp	Late archaic, early woodland, 1980-1930	Good	minimal subsurface testing, possible Phase II
18D0198	Historic plantation & prehistoric procurement camp	Mid & late woodland, 1740-1790	Good	Phase II
18D0199	Historic tenant farm	1890-1930	Good	minimal subsurface testing, possible Phase II
18D0200	Prehistoric procurement camp	Unknown	Poor	minimal subsurface testing, possible Phase II
18D0201	Historic plantation	1760-1840	Fair	Phase II
18D0202	Prehistoric procurement camp and/or base camp	Early & late woodland	Fair	Phase II
18D0203	Historic tenant farm & prehistoric procurement camp	Late archaic	Good	Phase II
18D0204	Prehistoric procurement camp	Late archaic	Poor	minimal subsurface testing, possible Phase II
18D0205	Prehistoric procurement camp	Unknown	Poor	minimal subsurface testing, possible Phase II
18D0206	Historic tenant farm	1860-1920	Fair	minimal subsurface testing, possible Phase II
18D0208	Historic plantation	1690-1720	Good	Phase II
18D0209	Historic tenant farm	1860-1900	Fair	Phase II

Source: MAAR Associates, 1993; Baldo, 1994.

Delmarva Power argued that the sites recommended for Phase II evaluation comprised a representative sample of potentially significant archaeological resources on the Dorchester site, contrary to both federal

regulations and corresponding Maryland procedures requiring determinations of significance of all identified archaeological properties (Cole 1994b). As a result, the CPCN requires that Delmarva Power perform formal Phase II testing of archaeological sites 18DO193, 18DO200, 18DO204, 18DO205, 18DO206, and 18DO209 if they will be unavoidably disturbed by the construction or operation of the facility. If any of these sites were determined to be significant and eligible for the national Register, Delmarva Power will have to undertake archaeological treatment measures for the significant sites in consultation with MHT to avoid the loss of archaeological information. Delmarva Power committed to sponsor these evaluations (Baldo 1994).

Site preparation for the Dorchester power block will unavoidably disturb sites 18DO197, 198, 199, and 203 in the northeastern section of the Dorchester site property. Sites 18DO198 and 18DO203 are considered significant and eligible for nomination to the National Register under terms of Criterion D (has or may be likely to yield information important in prehistory or history). To avoid the irretrievable loss of archaeological data from these sites, Delmarva Power will undertake mitigative measures comprising Phase III data recovery (McNamara 1981). Delmarva Power agreed to determine the significance of sites 18DO197 and 18DO199 through formal Phase II testing. If these sites are considered significant and eligible for nomination to the National Register, Delmarva Power will undertake mitigation as appropriate prior to disturbance of the site (Baldo 1994).

Phase IA archaeological assessments (i.e. archival background study) for the proposed joint rail and transmission line corridor and the pipeline route (Delmarva Power, Phase II CPCN application, 1993, pg 2.2.5-13) failed to reveal any significant cultural resources within these rights-of-way. The Phase IB portion of the survey (i.e. field investigation) for these rights-of-way will be completed once access is gained to these rights-of-way. Surveys were not conducted at the proposed barge unloading facility because the area has been extensively disturbed by grading for the existing Vienna power plant and barge unloading area (Cole 1994a).

Delmarva Power's historic sites survey within a 5-mile radius of the plant site identified approximately 85 historic structures. Fifty historic structures were recorded within an area of potential impact (APE) of 2 miles from the plant. Additional historic structures were located within the towns of Vienna and Salem. Within the APE, nine rural properties and a potential historic district at Reid's Grove were investigated further, resulting in recommendations for eligibility for the listing of four individual properties in the National Register (Ralph Farm, Nichols Farm, Ralph Harding Farm and Little Mill Farm) and the listing of Reid's Grove in the National Register as a historic district (Delmarva Power, Phase II

CPCN application, 1993, pg 2.2.5-19). Construction of the proposed Dorchester power plant will not directly impact any historical structures in the area.

MHT did not concur with all of Delmarva Power's findings, nor did it consider the level of information provided in the Phase II architectural investigations to be adequate to support determinations of eligibility. As a result, the CPCN requires that Delmarva Power revise the Phase II architectural investigations and MHT inventory forms for the nine individual properties and one historic district that were recommended for further investigation in Delmarva Power's Phase I report. Delmarva Power must submit the revised Phase II report and inventory forms for review by MHT. If National Register eligible properties will be adversely affected by construction or operation of the Dorchester power plant, Delmarva Power should consult with MHT to develop appropriate mitigation plans.

Delmarva Power's APE for its historic sites survey was centered around the location of the power block for the proposed Dorchester facility, but did not extend along the Delmarva Power branch line between Kelly Road and its tie-in to the Cambridge-Preston line in Hurlock. As the branch line has been unused for several years, the operation of unit coal trains over a rehabilitated track will constitute a significant change in activity that could adversely impact historic structures within the corridor's APE. Therefore, the CPCN requires that prior to the refurbishment and upgrading of the rail line from Hurlock to the Dorchester site, Delmarva Power must conduct a Phase I reconnaissance survey for historic structures within a designated APE for the rail corridor. Delmarva Power must then conduct Phase II evaluations on all historic sites within APE determined to be potentially significant, and submit its findings to the MHT For those sites adversely impacted by the operation of the rail corridor, Delmarva Power must consult with the MHT to develop appropriate mitigation plans.

Operation of the Dorchester facility will unavoidably disturb archaeological sites in areas used to store combustion by-products. Sites in the vicinity of Waste Disposal Area 1 are 18DO192 and 18DO209 (Delmarva Power, Phase II CPCN application, 1993, Figure 4.9.0-1). MHT concurred that no treatment measures were warranted for 18DO192 because the site was ineligible for the Maryland Register of Historic Properties. As discussed previously, if disposal of combustion by-products would disturb 18DO209, the CPCN requires that Delmarva Power conduct a Phase II evaluation of the site's significance and Maryland/National Register eligibility to determine whether additional treatment measures are necessary.

Impacts of plant operation on historical structures within the APE of the facility and near linear facilities associated with the plant will affect primarily the aesthetics of these resources which have been discussed in detail earlier in this section. Noise and other nuisance impacts will be localized to the plant site and properties next to the joint rail and transmission line corridor, and will leave historic properties largely unaffected. Increases in commuter traffic along SR 331 will be minimal during operations, resulting in no significant impact to historical structures along this route. Automobile and truck traffic to the Dorchester property will be directed to Maiden Branch Road to avoid impacting the historic district of Reid's Grove. Truck traffic associated with the barge unloading facility could impact two structures considered eligible for nomination to the National Register (Ralph Farm and Nichols Farm), although both are set back from SR 331 and may be adequately buffered.

Visual impacts associated with facility structures will unavoidably impact some historic properties within the APE, although many properties are fully or partially buffered by intervening vegetation. The stack will probably be visible from the four individual properties considered eligible for nomination to the National Register (Ralph Farm, Nichols Farm, Ralph Harding Farm and Little Mill Farm) but will likely not be visible from Reid's Grove because of the location of a mature woodland between the community and the plant. The boiler building will probably be visible only from the Nichols Farm and the Ralph Harding Farm. Stacks and associated plumes will be visible from some locations within the Town of Vienna. Perspectives from which facility structures can be viewed, however, will fill a narrow angle in the line of sight, suggesting that the impacts will have no adverse affect upon the historical value of these resources.

4.8 TRANSPORTATION

4.8.1 Road Network

The construction work force for Dorchester Unit 1 is projected to average 466 workers over the 38 month construction period, peaking at approximately 700 about 20 months into the construction schedule (Delmarva Power, CPCN application, 1993, pg 4.10.1-1). Although future traffic volume at any given time during construction will depend upon employment at the site, automobile occupancy factors and shift scheduling, construction worker traffic is not expected to seriously disrupt normal traffic flow on area roads.

Access to the construction site will be by Maiden Branch Road from SR 331. Prior to construction, Delmarva Power will improve Maiden Branch

Road, and the segment of Maiden Forest Road between Maiden Branch Road and the main operational entrance to the plant, by widening the road surface to 32 feet and constructing two paved 12-foot-wide travel lanes with paved 4-foot-wide shoulders. SR 331 will be improved at its intersection with Maiden Branch Road by constructing acceleration and deceleration lanes on the southbound side and a northbound bypass lane to accommodate left-turning traffic (Delmarva Power, CPCN application, 1993, pg 4.1.10-2).

Temporary signs on SR 331 will direct all construction traffic to use Maiden Branch Road, and not Maiden Forest Road because of its narrow width, poor intersection geometry with SR 331, and proximity to resident populations. In addition, plant construction contracts will include a provision restricting all construction-related traffic to Maiden Branch Road from SR 331, to be enforced both by contractors and Delmarva Power (Delmarva Power, 1994, response to DNR Data Request No. 1, Question 39).

Delmarva Power estimated that up to 10 percent of automobiles commuting to the site from the east on US 50 will access the site from its intersection with Maiden Forest Road about 3 miles west of the US 50 intersection with SR 331 (Delmarva Power, Phase II CPCN application, 1993, Figure 4.10.1-1). US 50 eastbound has a reserved left-turn lane and US 50 westbound has both deceleration and acceleration lanes at this intersection. Although few residences are proximate to this section of Maiden Forest Road, its alignment and width are not suited to commuting traffic. As a result, the CPCN requires that construction worker traffic be discouraged from using this route by temporary signs on US 50 directing all construction traffic to use the SR 331 exit to access the construction site.

Increases in traffic volume during construction will be most noticeable on SR 331 between the US 50 interchange and Rhodesdale, to the north of the site. Average annual daily traffic on this segment was 1,300 in 1992 with a peak hour volume of 147 vehicles per hour (Delmarva Power, Phase II CPCN application, 1993, Table 2.2.9-2). At the time of PPRP's evaluation, highway operated at level of service (LOS) "A," indicating free flow conditions (TRB 1985). In the peak construction period, construction worker traffic will add nearly 500 vehicles to the highway during the morning and afternoon peak hours, predominantly from the south assuming an automobile occupancy factor of 1.5 (persons per vehicle). During these brief periods, SR 331 will operate at LOS "C," indicating stable but restricted flow. Congestion on SR 331 will increase if auto occupancy factors are less than projected. However, even if occupancy factors approach one person per vehicle, the level-of-service on SR 331 during morning and afternoon rush hours will still be LOS "C."

Critical intersections near the plant are the intersections from the eastbound and westbound ramps of US 50 at SR 331, and the "T" intersection of Maiden Branch Road and SR 331. Access to SR 331 from US 50 is by a grade-separated partial cloverleaf interchange. Eastbound and westbound traffic on US 50 traveling to the Dorchester site will turn left onto SR 331 at separate at-grade, unsignalized intersections on the south and north sides of the US 50 overpass, respectively. Outbound traffic from the construction site accessing US 50 will exit SR 331 by deceleration lanes onto eastbound or westbound on-ramps. These intersections operated at LOS "A" in 1993 (Delmarva Power, Phase II CPCN application, 1993, Table 2.2.9-3), indicating little or no delay.

Maiden Branch Road intersects SR 331 at an at-grade, unsignalized intersection. The sight distance on SR 331 north of Maiden Branch Road is below MSHA intersection standards for design speed on SR 331. Delmarva Power will reconstruct this intersection in the course of widening Maiden Branch Road before plant construction. SR 331 will be reconstructed to improve sight distance, add deceleration and acceleration lanes for southbound traffic, and add a left-turn lane for northbound traffic (Delmarva Power, Phase II CPCN application, 1993, pg 4.10.1-2).

The intersection of Maiden Branch Road and SR 331 operates at LOS "A." During the peak construction period, the Maiden Branch Road intersection with SR 331 could be periodically congested, particularly during the afternoon when construction workers exit the site. Although Delmarva Power projected that the intersection will operate at LOS "A" with the additional construction traffic (Delmarva Power, Phase II CPCN application, 1993, Table 4.10.1-1), drivers could experience from short (LOS "B") to very long (LOS "E") traffic delays if automobile occupancy factors are lower than projected.

Intersection levels-of-service at the SR 331-US 50 interchange will not degrade significantly during the peak construction period due to the dispersion of traffic to the north on SR 331 and to the east and west on US 50. However, construction workers heading eastbound could experience delays entering US 50 in the summer when beach-bound traffic is heaviest.

Most construction workers will enter the Dorchester site through an auxiliary entrance requiring a left-turn from Maiden Branch Road. Although this intersection could be moderately congested in the mornings and afternoons by construction worker traffic, the impacts will be of limited duration and largely internalized to the construction site.

Other construction traffic from trucks delivering materials to the site will be dispersed throughout the day. Delmarva Power estimated that an average of 10 to 20 trucks will deliver supplies to the site each day. Most

of these trucks will travel to the site by US 50 and access the site from Maiden Branch Road (Delmarva Power, Phase II CPCN application, 1993, pg 4.10.1-2). The CPCN requires that Delmarva Power discourage trucks from using Maiden Forest Road because of its narrow width, poor intersection geometry with SR 331 and proximity to resident populations by installing regulatory signs on the eastern segment of Maiden Forest Road to face westbound traffic and east of Maiden Branch Road facing eastbound traffic. Delmarva Power must also install a sign on eastbound Maiden Forest Road approach to Maiden Branch Road directing trucks to use Maiden Branch Road to access SR 331 (Delmarva Power, 1994, response to DNR Data Request No. 1, Question 39).

Operation of the Dorchester facility will generate additional automobile and truck traffic on local roads. Delmarva Power projected 68 workers for the O&M contingent, divided unevenly between three shifts over the 24-hour work day (Delmarva Power, Phase II CPCN application, 1993, pg 5.7.1-1). Approximately 61 commuter trips will be generated by the plant during the peak hour of traffic between 3:30 pm and 4:30 pm (12 inbound and 49 outbound). The estimated volume will not impact levels-of-service on any road segments or intersections leading to the plant.

Operation of the Dorchester facility will consume an average of 145 tons, and a maximum of 310 tons, of lime per day (Delmarva Power, Phase II CPCN application, 1993, pg 5.7.1-2). Lime will be transported to the facility by truck or rail from Pennsylvania and Virginia (Delmarva Power, 1994, response to DNR Data Request No. 1, Question 45). If transported by truck, between nine and 19 truck loads of lime will be delivered to the Dorchester site per day, adding between 18 and 38 round-trip truck trips to local roads. The most probable route for trucks will be US 50 to SR 331 to Maiden Branch Road. The addition of an average of less than four vehicles per hour to local roads will be insignificant in the absence of other truck traffic generated by the facility. Unless the proposed barge unloading facility is used as the primary source of coal, the increase in truck traffic attributable to operation of the power plant will be insignificant relative to current area conditions.

Automobile and truck traffic will enter and exit the property through the main gate located on Maiden Forest Road west of its intersection with Maiden Branch Road. To accommodate traffic to the plant, Delmarva Power will upgrade Maiden Forest Road between the plant's main entrance and Maiden Branch Road (Delmarva Power, Phase II CPCN application, 1993, pg 4.10.1-2). No other segments of Maiden Forest Road will be improved. The CPCN requires that Delmarva Power discourage all traffic from using Maiden Forest Road to access the site from SR 331, by guide signs with appropriate arrows near the intersection of SR 331 and Maiden Forest Road, and on both approaches on SR 331 to Maiden Branch

Road. In addition, during plant operation, Delmarva Power must advise all employees and suppliers of the access restrictions.

4.8.2 *Rail Network*

Construction of the Dorchester facility will generate some additional rail traffic on the Cambridge-Preston branch line from Seaford to Hurlock, since oversize or overweight deliveries are expected to be transported to the Dorchester site by rail. Delmarva Power anticipated completing improvements to its branch line from Hurlock approximately 15 months after the commencement of construction to permit the timely delivery of materials to the site (Delmarva Power, Phase II CPCN application, 1993, pg 4.10.1-2).

Approximately 5.7 miles of Delmarva Power's unused Hurlock-Vienna branch line from Hurlock to just south of the SR 331-Kelly Road intersection will be completely refurbished and upgraded to comply with applicable railroad standards for coal trains (Delmarva Power, Phase II CPCN application, 1993, pg 6.3.2-1). The existing rails on this section of track are inadequate to support coal unit trains and must be replaced by heavier rails. In addition, the ties, accessories and ballast are in poor condition (Delmarva Power, Phase II CPCN application, 1993, pg 6.3.3-1). Given the condition of the rail bed, Delmarva Power expected that refurbishing the 5.7 miles of track would be the same as constructing new track (Delmarva Power 1993a). Section 4.7 discussed impacts from refurbishing the branch line.

Delmarva Power will also construct a new 2-mile rail spur from south of the SR 331-Kelly Road intersection to the Dorchester site, and a new rail loop around the power plant (Delmarva Power, Phase II CPCN application, 1993, pg 6.3.2-1). The new rail spur will be collocated with the proposed transmission line between the site and its tie-in with the Vienna-Steele transmission line. Section 4.7 discussed impacts from constructing the rail spur.

Rail traffic generated by construction activities at the Dorchester site will be irregular and insignificant relative to current traffic on the Cambridge-Preston branch line. As a result, no impacts to area rail operations are anticipated.

If rail is used as the primary mode for transporting coal during plant operation, impacts from rail operations supporting the Dorchester power plant will be significant. To deliver coal to the Dorchester site, trains from the north or south of the Dorchester site will take the Conrail main line to Seaford, Delaware. At Seaford, the unit trains will interchange to the Cambridge-Preston branch line. MDOT owns this line, and the Maryland

& Delaware Railroad operates it. At Hurlock, the trains would interchange to Delmarva Power's line to Vienna, also operated by the Maryland & Delaware Railroad. Coal will be delivered to the site in 100 ton capacity cars in unit trains of up to 100 cars. Assuming annual coal consumption of 857,779 tons per year (80 percent capacity of the power plant), an average of 1.7 unit trains per week will deliver coal to the Dorchester site. At full plant capacity, an average of 2.1 trains per week will deliver coal to the facility (Delmarva Power, Phase II CPCN application, 1993, pg 5.7.3-1).

Operation of nearly two unit coal trains per week over the Cambridge-Preston branch line between Seaford and Hurlock will be a significant increase in rail traffic on the line. In 1994, annual traffic on the Cambridge-Preston and Chestertown-Centreville lines combined was between 2,000 and 2,500 freight cars (Harshaw 1994). If the rail mode is used exclusively to supply coal to the Dorchester facility, traffic will increase by a factor of five, to more than 10,000 freight cars annually. Even if only 50 percent of the coal is transported to the site by rail, traffic will increase by about 4,000 freight cars annually.

Although no major investment of the Cambridge-Preston line should be required to support train operations to the Dorchester facility, the CPCN requires that Delmarva Power evaluate the need for reconstructing this line to safely accommodate the proposed rail deliveries. Much of the Cambridge-Preston line has already been rehabilitated with most of the track classified as Class 2, although parts are FRA Track Standard Class 1. (Trains can travel up to 10 mph on Class 1 track, and 20-25 mph on Class 2 track. Operating costs on Class 2 track are about one-half those on Class 1 track.)

MDOT currently has a contract with the Maryland & Delaware Railroad to operate trains over the Cambridge-Preston line. MDOT subsidizes service on state-owned branch lines through rehabilitation expenditures and operating subsidies. In 1994, the State provided an annual $375,000 maintenance subsidy to the Maryland & Delaware Railroad for the Cambridge-Preston and Chestertown-Centreville lines (Harshaw 1994). The additional traffic generated by the Dorchester facility will increase the likelihood of the branch becoming profitable.

Rail operations from the delivery of coal will periodically impact traffic on SR 331 and local roads between Hurlock and the plant site. At a speed of 25 miles per hour, each unit train will occupy most road crossings for nearly 3 minutes. At crossings of Centennial Road and Maiden Forest Road, occupancy times could be as high as 8 minutes due to slower operating speeds as the trains enter and exit the plant (Delmarva Power, Phase II CPCN application, 1993, pg 5.7.3-1). Given the projected

frequency of rail delivery of coal, average delays experienced by motorists will be acceptable. The longer delays on Centennial Road and Maiden Forest Road will affect few motorists given the low traffic volumes on these roads.

Once operational, lime may be delivered to the Dorchester facility by rail. Consumption of an average of 145 tons of lime per day will require one 10-car delivery of lime per week (Delmarva Power, Phase II CPCN application, 1993, pg 5.7.3-1). The additional traffic of about 500 freight cars per year on the state-subsidized Cambridge-Preston line represents a moderate increase in traffic (25 percent). The impacts of lime delivery on traffic flow on local roadways, however, will not be significant because of infrequent deliveries and short train length.

4.8.3 *Barge Network*

Delmarva Power proposed operating a coal handling system for the barge delivery of coal constructed next to the Vienna power plant on the Nanticoke River. The system will consist of three new docking spaces at the south end of the existing Vienna power plant, a barge unloading conveyer, belt conveyers, screw conveyer and 500 ton coal silo. The three docking spaces will permit the simultaneous unloading of coal for the Dorchester facility and oil for the Vienna power plant, plus an additional space for parking an empty coal barge (Delmarva Power, 1994, response to DNR Data Request No. 1, Question 48).

Barge delivery of coal will originate either at Baltimore Harbor, Maryland, or Hampton Roads, Virginia (Delmarva Power, Phase II CPCN application, 1993, pg 6.4.1-1). Barge dimensions will be 300 feet long by 60 feet wide with a 9-foot draft. The carrying capacity of each barge will be 2,900 tons. If barge is utilized exclusively for transporting coal to the Dorchester power plant, approximately one barge delivery per day will be needed to maintain adequate supplies. At an 80 percent capacity factor, the Dorchester facility will require an average of 5.7 barge loads per week (Delmarva Power Phase II CPCN application, 1993, pg 5.7.4-1). An average of 7.1 barge loads per week will be required if the Dorchester power plant operated at a 100 percent capacity factor.

In 1991, 212 barge loads were carried over the Nanticoke River. The additional barge traffic attributable to the Dorchester facility will more than double total barge traffic on the river to over 500 barge loads (Delmarva Power, Phase II CPCN application, 1993, pg 6.4.8-6). The additional traffic could create some potential for traffic congestion along the 19-mile stretch of the Nanticoke River because of its relatively narrow width (1,000 feet) and shallow depth (28 feet). The Nanticoke River is navigable for commercial barge traffic to Seaford, Delaware; the COE

maintains an authorized channel depth of 12 feet and width of 100 feet. The narrowest reach of the river is about 650 feet at Ferry Point near Vienna (Delmarva Power, Phase II CPCN application, 1993, pg 6.4.8-2).

Delmarva Power estimated that the barge supply system would require six barges and two tugboats to maintain coal inventories for Dorchester Unit 1. To reduce the tugboat size required to transport coal barges up and down the Nanticoke River, one barge will be moored at the mouth of the Nanticoke River (Delmarva Power, 1994, response to DNR Data Request No. 1, Question 48). No more than one barge will be traveling between the mouth of the Nanticoke River and the Vienna unloading facility at any given time (Delmarva CPCN application, pg 5.7.4-1).

Delmarva Power stated that the mooring space was part of the conceptual design of the coal barge delivery system, and that any mooring space will be the responsibility of the barge operator (Delmarva Power, 1994, response to DNR Data Request No. 1, Question 47). Since there is no mooring at the mouth of the Nanticoke River (Hartge 1994), one will have to be constructed. Construction of a mooring for a commercial facility requires state and federal permits, and a thorough consideration of potential environmental impacts. The presence of oyster beds at the mouth of the Nanticoke River may make the proposed mooring site unpermittable.

Coal will be transported from the coal silo at the proposed barge unloading facility to the Dorchester facility in 16.6 ton capacity trucks (Delmarva Power, Phase II CPCN application, 1993, pg 3.3.1-3). Coal trucks will exit the barge unloading facility onto SR 331 and travel north to Maiden Branch Road. Trucks will then turn left to enter the Dorchester site at an auxiliary entrance to the plant off Maiden Branch Road. The estimated length of the truck route is 2.75 miles; approximately 1.75 miles will be along SR 331 (Delmarva Power, Phase II CPCN application, 1993, pg 4-8).

If barge is used exclusively to supply fuel to the Dorchester facility, a maximum of 175 round-trip truck trips per day, over a 10 hour period, will be required to transport coal from the barge unloading area to the power plant (Delmarva Power, Phase II CPCN application, 1993, pg 5.7.1-2). Most of this truck traffic will occur during the hours of 7:30 am and 6:00 pm (Delmarva Power, 1994, response to DNR Data Request No. 3, Question 6). Delmarva Power estimated the roundtrip travel time for coal trucks, including loading and unloading time, will be 35 minutes. PPRP concurs with this estimate.

Operation of the barge coal supply system will require Maiden Branch Road to be widened and upgraded to accommodate heavy loads of the

coal trucks. Since Maiden Branch Road and its intersection with SR 331 will be improved to accommodate other anticipated traffic associated with the construction and operation of Dorchester Unit 1, no incremental improvements to local roads planned by Delmarva Power will be attributable solely to the coal supply system.

Operational impacts of the system upon local roadways will be significant, however, if the barge is used exclusively as the supply source for coal. Relative to 1992 traffic volume of 1,300 vehicles per day, the addition of 350 heavy trucks to SR 331 will represent a significant increase in traffic to this highway, particularly since the addition of heavy trucks to the traffic stream affects traffic flows on two-lane highways more severely than light trucks or passenger cars (TRB 1985).

Accounting for historical traffic growth, projected O&M worker traffic and projected truck traffic attributable to the barge unloading facility on SR 331, the level-of-service on the segment between US 50 and Maiden Branch Road in the peak afternoon period will decline to LOS "B" or "C" when the Dorchester facility becomes operational. In other words, the addition of truck traffic from the coal unloading facility will degrade operational conditions on SR 331 from free flow conditions where users are relatively unaffected by other traffic to stable flow where traffic using the roadway affects the operations of others (TRB 1985).

The intersection of SR 331 and Maiden Branch Road will be most congested during the afternoon peak hour (3:30 pm to 4:30 pm) when 61 workers will enter or exit the plant at the same time that trucks are delivering coal or returning to the barge unloading facility. However, even when accounting for historical traffic growth on SR 331, the intersection will operate at LOS "A" in the peak hour when the facility becomes operational, indicating little or no delay to vehicles in the intersection (TRB 1985).

Although the level-of-service on SR 331 will still be acceptable, the addition of up to 350 trucks per day between the Vienna power plant and Maiden Branch Road could compromise safety on this segment of highway. The accident rate along the segment of SR 331 between US 50 and Rhodesdale declined between 1990 and 1992 from 190.9 to 93.3 accidents per million vehicle miles (MSHA 1994). Over the same period, accident rates for collisions with fixed-objects and for sideswipes along this segment of SR 331 were significantly higher than the statewide average for similar state maintained highways. Only one accident over the 3 year period involved one or more trucks.

Accident rates could increase due to the number of slow moving vehicles on the SR 331. On the basis of a 35 minute roundtrip and assuming 10

minutes for waiting and loading or unloading at each end of the trip, the total round-trip travel time for each truck on either Maiden Branch Road or SR 331 will be 15 minutes, implying an average speed of 22 miles per hour, including acceleration, deceleration and stops or yields for turning movements. Pro-rating on the basis of mileage, each truck will be on SR 331 for a total of 9.5 minutes. In other words, coal trucks will be on SR 331 for about 25 percent of the time during the 35-minute roundtrip. Assuming 17 round-trip truck trips per hour, there will likely be two or three heavy trucks heading either north or south on SR 331 between the Vienna power plant and Maiden Branch Road at any time during the 10-hour period when the trucks are operating. Traffic conflicts could be acute near the intersections of ramps from US 50 to SR 331 since coal trucks will be accelerating or decelerating in that section of the highway.

Additional conflicts could occur at the intersection of SR 331 and Maiden Branch Road during left-turning movements of loaded coal trucks from the reserved left-turn lane on northbound SR 331. Potential traffic conflicts between coal trucks and other vehicles will be reduced at this intersection if left-turns were routed through a jug-handle turn rather than a reserved left-turn lane since left-turning trucks would be removed from the traffic flow prior to decelerating and crossing the intersection. The CPCN requires that Delmarva Power consult with MSHA prior to final engineering design to determine the appropriate geometry for this intersection.

If used as the primary or exclusive mode of coal transportation, the barge alternative will impact traffic and residences along the proposed truck route more severely than the rail alternative would impact traffic and residences along its route to the plant from Hurlock. The degree to which the proposed coal unloading facility will impact the area, however, will depend upon the degree to which it is used to supply coal to the Dorchester power plant. Delmarva Power proposed two coal supply systems, each capable of fully satisfying the fuel consumption needs of the Dorchester facility plus any additional units that might be built there. The barge alternative will ensure that fuel supplies would not be disrupted in the event of closure of the Chesapeake & Delaware Canal railroad bridge, but will otherwise be redundant except for negotiating a lower freight rate with Conrail.

Delmarva Power owns an unused railroad right-of-way that parallels SR 331 from the Vienna power plant to Maiden Branch Road. (The new US 50 overpass of SR 331 was constructed to preserve this right-of-way.) An alternative coal truck route using this right-of-way will physically separate heavy truck traffic from vehicular traffic on SR 331 except at the intersection of SR 331 and Maiden Branch Road. Delmarva Power undertook a preliminary assessment of this option but rejected it because